

XTAL

for the
radio
amateur

FEBRUARY

1948

Vol. 10 No. 2

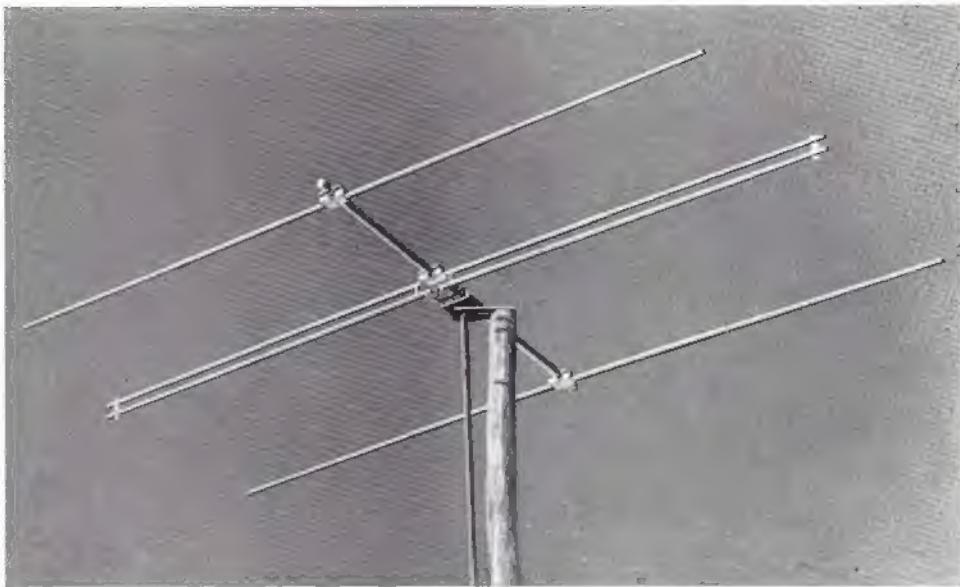
Albert E. Yates, VE3BIJ
232 Benson Ave.,
Toronto 10, Ont.

7/48



OFFICIAL JOURNAL
THE CANADIAN AMATEUR RADIO OPERATORS' ASSOCIATION
TORONTO, ONTARIO





HAMMOND

TEN METER BEAM MODEL 1321

A three element all metal beam using a reflector, a director and a folded di-pole radiator. The elements are made of large diameter special alloy Aluminum Tubing with excellent tensile strength and telescopic outer sections provide ease of adjustment and are of sufficient length to permit 11 meter operation.

Model 1321 will give excellent results and maximum gain when it is adjusted to the lengths and spacings for desired frequency as shown on the chart. No further tuning is required for average installations. The centre impedance is 90 ohms and twin conductor co-ax BA4M as a feeder will provide a balanced line. Other feed systems may be used providing they match the centre impedance of the radiator.

The complete array is designed for low wind resistance and is constructed to withstand the rigours of a Canadian winter and is supplied with an 8 x 8 inch steel mounting cradle for bolting to your rotating head and complete instructions for easy assembly. Overall maximum dimensions 9' 7" x 17' 6", total weight 26 lbs., driving torque approx. 2 foot pounds.

Amateur Net Price **\$34.50**

Slightly higher in the West.

NEW RELEASE! Type 167-Q transformer pri. 115V 25 or 60 cycle sec. 25V 3A C.T. continuous duty. Ideal for propeller pitch motor rotating heads or other war surplus equipment.

DISTRIBUTED THROUGH LEADING JOBBERS FROM COAST TO COAST

HAMMOND MANUFACTURING COMPANY
Limited

GUELPH • ONTARIO • CANADA

The Newest Thing in Ham Radio

Model "77"

AN ENTIRELY CANADIAN
DESIGNED AND BUILT PRODUCT

COMBINATION WAVEMETER MODULATION INDICATOR

Good control equipment is any Ham's dream, but when so many important control functions can be served by one compact instrument at a price every Ham can afford, it becomes a must.

Amateur Radio needs multi-purpose equipment and for sheer usefulness the new Model "77" is a regular "Aladdin's Lamp".

With one unit you can accurately spot your transmitter where you want it on the band, search the region between bands for harmonics and parasitics, monitor your quality, plot antenna field patterns, indicate changes in actual radiated power output, and — best of all — keep constant watch on your percentage modulation on a direct reading dial. Covers all bands up to and including 420 Megacycles.

It's the neatest thing you ever saw, accurately calibrated, precision built throughout, and represents an ingenious and typical Canadian answer to Ham Radio's oldest equipment problem.

Model 77—Size 2" x 2 1/2" x 5 1/4" with coils for 10, 20, 40 and 80 meter bands \$29.50



9 FEATURES

- An accurate wavemeter band-spread for each ham band with individual hand-drawn calibration curves and a sensitive 0-75 microammeter as a resonance indicator.
- Separate plug-in coils for each of 10, 20, 40 and 80 meter bands supplied—coils for other bands available at slight extra cost.
- Additional between-band coverage available at the flip of a switch.
- Extremely sensitive field strength indicator calibrated in relative power output, for antenna adjustment and field pattern measurement.
- Push button switch for dual meter sensitivity plus provision for a plug-in antenna covers all possible field strength conditions.
- Provision for head phones for use in station monitoring and quality control.
- Finally, a direct reading Percentage Modulation Indicator, with the instrument calibrated 0-110% Modulation.
- Designed to function on the 144,235 and 420 megacycle bands without coils, but with a quarter wave antenna section. Reads field strength and percent modulation and spots the band at these frequencies.
- Compact in size and completely shielded in an attractively finished cast and aluminum case.

Bach-Simpson Limited
71 Carling St., London, Canada

HUNT DX ECONOMICALLY

with a pair of
GL-8005's!



GENERAL ELECTRIC Radiotrons

DOUBTLESS you're weighing your rig's DX possibilities. How about a real try for overseas areas that you haven't been able to work in the past?

Your power tubes need consideration first. Possibly their replacement is called for. If so, may we suggest GL-8005's in push-pull—in case you want plenty of dependable watts per dollar, and your rig is in the medium-power class.

CW input for a pair of GL-8005's is 600 w. Phone input is 475 w. Two of these distance-spanning triodes cost no more than one typical 500 w. tetrode, and you have greater reliability because triodes don't need "babying along". That's vital when you're out after DX.

A single GL-8005 can, of course, be used for the final stage, with input one-half of the figures above, but we



recommend two tubes... and not just because of the higher input with a pair. For with GL-8005's in push-pull, you (1) reduce second-harmonic radiation which today should be all but eliminated in ham transmitters, and (2) enjoy a better-balanced circuit and layout.

Max ratings apply up to 60 mc frequency, or well beyond the 6-meter band. And drive requirements are low—15 w for a pair in CW operation, 18 w phone—so that replacing your present tubes with GL-8005's usually means little, if any, change in your rig.

Ask your G-E tube distributor for prices and other up-to-the-minute information on Type GL-8005.

See your G-E tube distributor for the latest copy of *Ham News*. FREE!

ELECTRICAL CHARACTERISTICS

Filament voltage	10 V
current	3.25 amp
Interelectrode capacitances:	
grid-plate	5 mmfd
grid-filament	6.4 mmfd
plate-filament	1 mmfd

RATINGS (ICAS) FOR TYPICAL OPERATION

	Class C	Class C
telephony	telegraphy	
Plate voltage	1,250 v	1,500 v
current	190 ma	200 ma
Driving Power	9 w	7.5 w
Power input	235 w	300 w
		TU-148

CANADIAN GENERAL ELECTRIC CO LTD

HEAD OFFICE — TORONTO



XTAL

[C R Y S T A L]

VOL. X
FEB.

1948
No. 2

OFFICIAL PUBLICATION
of
CANADIAN AMATEUR RADIO

Published by

THE CANADIAN AMATEUR RADIO OPERATORS'
ASSOCIATION

Affiliated with R.S.G.B. and A.R.R.L.

46 ST. GEORGE ST., TORONTO 5, ONTARIO
TEL. Midway 8235

CONTENTS

	Page
Editorial—Reciprocity	4
CAROA VHF Marathon	4
Rehabilitating the AR6	5
Club Activities	7
VHF in Canada	8
VE/W Contest	9
DX News	10
National Report	12
B.E.R.U. Contest	14
Public Service	15
Dear OM	16
Ontario Phone Net Fund	18

CAROA

STAFF

Editor

T. G. E. Powell, VE3ZE

VHF Editor

R. G. Coleman, VE3ANY

DX Editor

R. D. Carter, VE3QD

Advertising Manager

John V. Perdue, VE3QK

OFFICERS

President

T. G. E. Powell, VE3ZE

Vice-President

R. A. R. Macdonald, VE3APS

Secretary-Treasurer

W. H. Anderson, VE3AAZ

EXECUTIVE COMMITTEE

The Officers and,

R. D. Carter, VE3QD

R. G. Coleman, VE3ANY

D. G. Hall, VE3TB

A. A. McArthur, VE3DJ

A. Palmer, VE3WK

D. W. Patterson, VE3BBZ

J. V. Perdue, VE3QK

P. Posnikoff, VE3BBN

J. Staley, VE3GR

H. A. M. Whyte, VE3BWY

CAROA

Authorized as second class mail,
Post Office Department, Ottawa.



Since going to press with January issue, have been thinking about a letter written by Friend Pugh, VE5AP, and how what is one man's meat is another man's dessert.

The long experience of the backwoods ham with dynamos, batteries, and the tubes used in conjunction with them, would be invaluable to the urban ham in designing emergency portable rigs. The knowledge they have obtained regarding tube and battery life under the conditions which to them are normal is not to be found in any textbooks of which we are aware. There is no test bench can compare with field work.

Conversely, what an urban ham, with no limit on supplies available, might evolve as a portable or emergency rig, might be of great assistance to new hams in more remote parts.

Ed's letter gives point to requests which we

have made on previous occasions that such write-ups be sent to XTAL as part of an information service for all Canadian hams. In visiting ham shacks, one is continually amazed at the ingenuity displayed by the builders of equipment, and also at the degree of modesty which seems to deter them from passing on to others the knowledge they have gained through experiment.

To most of us, the time available for the pursuit of our hobby is limited and to those the time saved in design and experiment would permit them to do more operating. This will apply chiefly to urban hams because of the multiplicity of organizational activities taking place in any large centre.

We all can, therefore, help each other, the state of the art and ham radio in general by making use of the clearing house which is provided in the columns of XTAL.

CAROA VHF MARATHON

ON March 1 Canadian VH and UHFers will get off on CAROA's first VHF Marathon. In an effort to determine where this type of activity is greatest, and where it is developed to the highest degree, CAROA will award certificates of merit to the leaders in each call area at the conclusion of the contest period. The VHF Marathon should also encourage more extensive operation and experimentation on these sparsely used frequencies, especially in centres where little or no activity of this nature exists.

Dates

MARCH 1 to JULY 31

Rules

Points may be claimed for each different station worked in any 24-hour period beginning March 1 at 00.01 hours. Cross-band operation will be permitted on frequencies of 50 Mc and above. An Activity Bonus of 1 point may be added after multipliers for each contact, 40 miles or under, after 25 QSO's have been logged subsequent to the first day of each month. Bonus is included to encourage local activity for exchange of information on technical data, networks, and general subject matter as well as affording as near constant observation of band conditions as possible.

Scoring

Contacts 1 to 40 miles	1 point
Contacts over 40 and up to 150 miles	2 points
Contacts over 150 and up to 500 miles	3 points
Contacts over 500 and up to 3,000 miles	4 points
Contacts over 3,000 miles	5 points

Frequency Multipliers

50-54 Mc	Multiply by 1
144-148 Mc	Multiply by 2
235-240 Mc	Multiply by 10
Above 240 Mc	Multiply by 50
FM or NBFM transmitted	Multiply by 2

One point may be claimed for each contact after 25 QSO's have been completed subsequent to the first of each month.

Qualifications

Monthly reports must reach CAROA Headquarters, 46 St. George St., Toronto, Ontario, by the fifth of each month. This allows participants to compile scores on the last day of each month and forward in ample time to meet publication deadline and avoid disqualification.

Awards

Certificates of merit will be awarded to the leader in each VE call area, and a suitable certificate to the national high scorer.

Rehabilitating the AR6 Receiver

By Ev. McTaggart VE3BDP

ONE of the more recent war surplus releases has been the R.C.A.F. communications receiver AR6, manufactured by Northern Electric during the early years of the war. This receiver was built around a fairly conventional 6-tube circuit using a 6SK7 RF, 6K8 oscillator and mixer, 6SK7 IF, 6SQ7 second detector and first audio, 6J5 BFO, and 6K6G output. Being an aircraft receiver, it included several special features such as remote operation, a 6K6G intercom stage, facilities for direction finding, and a dynamotor high-voltage supply operating from 24 volts DC (12 volts in the case of the AR2, which is otherwise similar). It is quite adaptable to 25 or 60-cycle operation; and, adding to the original cost, the few dollars for new parts required, an investment of 10 to 20 hours of your time can produce a very useful general coverage receiver, representing better dollar value than most of the commercial models.

The ranges covered by the five bands are as follows:

Band No. 1	140 to 400 Kc.
Band No. 2	480 to 1300 Kc.
Band No. 3	1.25 to 3.4 Mc.
Band No. 4	3.2 to 8.5 Mc.
Band No. 5	8.2 to 21.0 Mc.

The first step in the change-over is to strip the chassis of the following components which will not be necessary for straight-forward receiver operation: The dynamotor, the two motor-driven mechanisms for remote operation of the band switch and the mode of operation switch, their associated controlling switch wafers, the remote-local switch, the sense antenna post, the intercom gain control, the sidetone gain control, the Cannon multiple connector, all leads from the 6K6G intercom tube socket, the input and output transformers on either side of it, the sidetone transformer and filter choke beneath the chassis, the primary fuse holder on the chassis; all fixed condensers, RF chokes, and resistors in the two compartments under the right-hand side of the chassis; the heater connection terminal strip, all the pieces of tubing which have served as shields for long audio leads, and all brackets, clips, covers, etc., which look as though they could be dispensed with. The mode of operation switch is removed for now, but is to be cut down and reinstalled.

By the time you have all these parts and their wiring removed, you are probably wondering if this set is going to end up by joining the other skeletons now resting peacefully in your chassis graveyard. But don't get discouraged, for from here on the work is constructive rather than destructive.

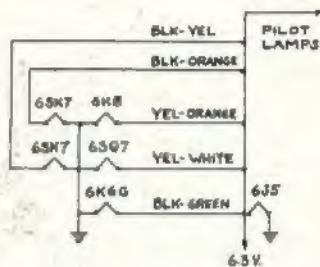


FIG. 1. - HEATER CIRCUIT

A Hammond 270B (or other suitable transformer giving 5v. 2 a., 6.3v. 2a., and about 250-0-250v. 40 ma.) is mounted about halfway back on the right-hand side of the chassis, and the octal socket previously used for the 6K6G intercom tube is now wired for a 5Y4G rectifier. The line cord is brought through a rubber grommet in the hole in the panel vacated by the sense antenna post, and connected through the on-off toggle switch on the panel to the power transformer primary. The 6.3 volt heater supply is connected to the 6J5 heater, and one side should be grounded to chassis. The heaters were originally connected in pairs of two in series and brought to the terminal strip. Fig. 1 shows how they can be most conveniently wired for 6 volts. No wire need be added except for the ground connections.

Inside the chassis on the right-hand end mount two 8 mfd. 450-volt filter condensers, a filter choke (Hammond 155 or equivalent), and a speaker output transformer (Hammond 57 or equivalent). A 1 1/4" square of bakelite serves to cover the large hole left in the panel by the Cannon connector and to mount two pin tip jacks for 4-ohm PM speaker terminals. A phone jack is mounted in the hole marked "I. C. Gain" and connected to the output terminals 3 and 4 of the headphone output transformer immediately in front of the 6K6G out-

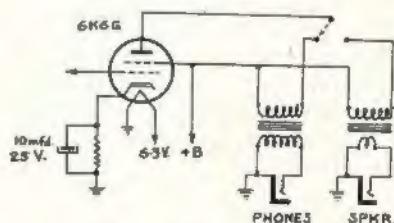


FIG. 2. - OUTPUT CIRCUIT

put tube. The $\frac{1}{8}$ " hole marked "Sidetone Gain" is drilled out to $\frac{1}{2}$ " to take a SPDT toggle switch which is wired to allow the primary of either output transfer to be thrown into the plate circuit of the 6K6G (Fig. 2).

The filter condensers and choke are wired in the conventional manner, from the 5Y4G filament to the HT fuse on the panel, and the original 4 mfd. filter condenser is left connected in the HT circuit (Fig. 3).

The mode of operation switch may be greatly simplified, since "D.F. Loop" and "Sense" positions may be dispensed with. In fact, a single wafer (two circuits) is all that is required to give AVC "on" at RT position, AVC "off" at MCW position and BFO on (AVC off) at CW position (Fig. 4). Originally the mode of operation switch was arranged to give a very small AVC delaying bias on RT and to give a larger delaying bias on direction finding positions. To give the proper amount of delaying bias on RT, the end of the 4700-ohm 6SQ7 cathode resistor (second from rear on centre terminal strip) should be connected to ground. This resistor should be by-passed by one of the 5 mfd. condensers previously removed. The cathode of the 6K6G should be by-passed by a 10 mfd. 25-volt condenser.

Rather than try to salvage the original, a new 20,000 ohm $\frac{1}{2}$ -watt resistor is connected from the plate of the 6J5 BFO through the CW position on the mode of operation switch to plus B. The other section of the switch merely grounds the AVC common lead in MCW and CW positions. The stop on the switch should be changed to prevent turning to "DF Loop" and "Sense" positions.

The RF and AF gain controls must be connected directly now that remote operation is no longer desired. The RF gain control is already connected through decoupling resistors to the cathodes of the two 6SK7s and the 6K8 and requires only that the other lead, which originally went to the "Remote-Local" switch, be grounded. The AF gain control is to be connected conventionally, with the counter-clockwise end grounded, the rotor going to the 6SQ7 grid (all other leads removed from the grid terminal) and the other end going to the

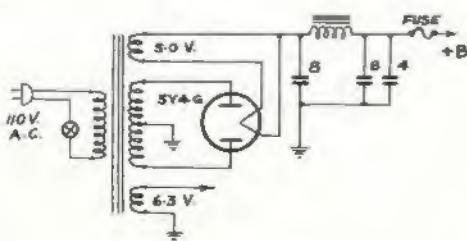


FIG.3.- POWER SUPPLY

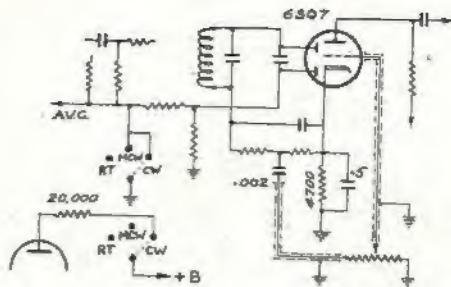


FIG.4.- 2ND.DET., GAIN CONTROL, & MODE OF OPERATION SWITCH

.002 mfd. blocking condenser (first condenser from rear of chassis on centre terminal strip). The latter two connections should be made with a pair of shielded wires running along the side of the RF coil compartment. Ground the shields well at both ends.

The leads are removed from the three ceramic insulated lugs on the side of the RF coil compartment and the green lead coming through near them is cut off short. These are not used since they are DF inputs, with the exception of the one nearest the front panel. It is the antenna input and may be connected to the antenna post by the shield lead already there.

It will be noted that several resistors and condensers previously used in the intercom, remote, and DF circuits are not now used. It is simpler to leave them in the set, since their salvage value is doubtful. If any loose leads are still evident, an effort should be made to trace and identify them to determine whether they should be eliminated or appropriately connected.

The 24-volt dial bulb should be replaced by a 6-volt one, and the 600 ohm brilliance control should be changed to one of lower resistance (100 ohms or so) or else eliminated. An additional jewelled pilot light will nicely fill the only remaining vacant hole, namely, the one left by the "Remote Local" switch.

The receiver should now be in operating condition, and, if so, the wiring may be cabled up neatly, and the receiver given a final alignment, if necessary. However, if your prayers aren't answered, you are in for a little trouble-shooting. An R.C.A.F. manual on this set is available at extra cost, and is well worthwhile, as it greatly facilitates any work on the set, and enables you to operate it more intelligently.

The tuning crank is geared up to a ratio of 200 to 1 with the tuning condenser by means of an external gear box. This permits easy tuning, although the dial does not lend itself

QSY to page 11

C A R O A CLUB ACTIVITIES

CAROA is endeavouring to revise its file of active clubs in Canada, so that the many inquiries regarding times and places of meetings, club executive, etc., can be fully answered. Numerous Canadian hams are required to be out of town on business and they would be like to feel that the welcome mat was spread for them wherever they go.

At some future date we would like to publish a club directory, so won't you please help us by dropping a line to 46 St. George St., Toronto, giving pertinent details?

It might be well at this time to remind the clubs that the only qualification for affiliation with CAROA is that 60 per cent of the club members be members of CAROA. Poll your membership, and, if qualified, request affiliation. There is strength in numbers and Canadian amateurs must have strength and unity if their future is to be secure.

Club news is brief this month, since many clubs suspended regular meetings during the Christmas and New Year's season.

The Winnipeg Amateur Radio Club held a pre-Christmas meeting on Dec. 15. A good representation of active club members were present and considerable time was given to discussion of the nomination for S.C.M. of ARRL. Members were urged to contact Alex Reid regarding the proposed amateur frequency changes. Ve4AD reported to the meeting the scope and significance of the new frequency allocation for NBFM.

The Lakeburn Amateur Radio Club, of Lakeburn, N.B., have elected their executive for 1948. They are: President, H. McKenzie, Ve1PA; Vice-president, R. Harris, Ve1RE, and Secretary-treasurer, D. Murphy, Ve1AQ. The club is looking forward to an interesting season with Ve1PA at the helm, as he was one of the original founders of the club and is an "old-timer," having been on the air since 1928.

The new executive of the Calgary Amateur Radio Club is as follows: President, G. Sargenia, Ve6AO; Vice-president, W. Hackett, Ve6PY; treasurer, J. Hunter, Ve6XX; Secretary, H. Picken, Ve6QS, and officers, Ve6BV and Ve6GR.

The Hamilton Amateur Radio Club, who hold their regular meetings in McMaster University on the third Thursday of each month, held a recent by-election, and Dan Welsh now fills the vacancy in the post of secretary. The first monthly issue of their

"Radio Club News," a mimeographed bulletin was published on January 10. In future this news sheet will serve to notify members of coming meetings, and an eager staff covering dx news, operation skeds, VHF activity, etc., is under the able editorship of Al. Whetham, Ve3BNQ.

The Wireless Association of Ontario, which meets on the second Tuesday of each month in the auditorium of the Training and Re-establishment Centre, Gould St., Toronto, was fortunate in having Morley C. Patterson, Ve3ER, address their January 13 meeting on N.B.F.M. In view of the fact that frequencies have recently been allotted in all phone bands for this mode of transmission, Mr. Patterson's talk was very timely and well attended.

The Cariboo Amateur Radio Club, Prince George, B.C., one of the newest organizations in the province, have made a fine beginning by instituting a drive to publicize the cause of amateur radio. The president, C. B. Moore, Ve7ADH, owner of a large electrical store in Prince George, donated window space to a special amateur radio exhibit, where receivers, transmitters, parts, books and miscellaneous gear were displayed and demonstrations given to an interested public. Results were a dozen new club members and embryo hams who are being given code instruction. The club secretary, Ve7DV, addressed the Prince George Rotary Club on amateur radio, and has been invited to enlarge upon the talk at a future meeting. Many of the leading professional and business leaders of Prince George were enlightened on the work and activities of the amateur in Canada and other countries of the world, both in peacetime and during a national emergency. There is a definite need for more publicity of this nature for amateur radio. What better way to handle this type of program than through an organized club? The Cariboo A.R.C. meets on the second Wednesday of each month, and code and theory classes, under the direction of Ve7ADH, Ve7DV and Ve7AHT, are held each Tuesday and Thursday.

The Scarboro Amateur Radio Club held their second annual banquet Jan. 24. More than 275 registered. Congratulations for conducting one of the largest and best ham gatherings ever held in Canada.

Please do not send membership fees in cash to H.Q. in unregistered letters. Send a postal note, money order or cheque.

VHF IN CANADA

Conducted by GORDON COLEMAN, VESANY

THE DX Derby which we have been publishing from time to time in this column has been started anew for the year 1948, as of Jan. 1, 0001 hours, local time. Past scores will, however, count toward CAROA, WAVE awards or any similar long-term competition. It is intended to present a certificate to the winner of this first CAROA Six-Meter DX Derby. At present writing it looks like a close race between Ve7AEZ and Ve1QZ. At present time reports are incomplete, but it is hoped that the winner will be announced next month. It should be remembered that the total of different dx contacts (that is, contacts beyond the normal range, taking advantage of exceptional conditions such as F₂, E, aurora, and temperature inversion skip, is the prime condition to be met. The portion of the derby devoted to "states worked" and "other QSO's" should only be taken as a matter of record. If, as it seems likely, the final scores are very close, two awards will be made.

With more stations becoming active on VHF, it may be possible to include frequencies higher than 50 Mc in a DX Derby.

The VHF Marathon, which is printed in some detail elsewhere in this issue, starts on March 1. It has as its major purpose stimulation of activity and consistency of operation on the frequencies above 50 Mc. Scoring should not present too much of a problem if points are tallied at regular intervals. The Certificates of Merit which will be awarded at the conclusion of the six-month period should be quite coveted, since there can be only nine winners in the whole of Canada, one from each call area and one grand winner. So let's go, VHF'ers. Start piling up a good score. Remember, the only qualification is that regular reports be forwarded to CAROA.

We urge all of you, once more, to drop us a line if you are active on VHF, and if possible appoint a reporter from your local group. It is in the interests of all hamdom to publicize their activities on VHF and UHF bands, since in the future these may be our only frequencies. We have already lost, since the war, 160 meters, and a quarter of a century ago we operated on 200 meters and 40 meters. You and I may be old and gray before we lose 80 meters, but the reduction of our low-frequency bands is inevitable. Some day those of us whose activities are reported in this column will be referred to as the "old-timers". So, what say, "old-timer", let us know what goes on above 50 Mc in your neck of the woods!

Several new 50 Mc and 144 Mc stations have made an appearance on VHF in Ontario during the past month. Ve3KE, Galt, Ont (originally of Ottawa), has been getting into Toronto lately. Vic started using a 40-meter V beam, 220 feet to a leg, and lately has been using a vertical folded dipole, cut for 50.5 Mc. Ve3AIO, Humberstone (near Port Colborne), has been active on six meters lately with a vertical folded dipole and a 3-element horizontal beam. Ve3AGX, Thorold, has an SCR522 on 144, and is building a converter for 50 Mc. Ve3AND, Hamilton, has joined Ve3DJ, Toronto, among the ranks of NBFM'ers on 50 Mc. George is using nine tubes to get down there, starting with a VFO on approximately 3.8 Mc. Ve3KM, BGT, AWR, are active on 144 Mc in Hamilton. Ve3AIB, Toronto, has recently got an SCR522 converted and operating and can be found on 144 Mc any night now.

Ve3BAN, Ve3ASJ and Ve3MP, Smith's Falls, Ont., are active on six meters and have been trying to QSO Ve3OJ, Ve3BBW and Ve3BBY in Ottawa. The Smith's Falls group are looking for contacts in Brockville, Kingston, Pembroke, and are hopeful for Montreal, 120 miles east. Ve2KH, Montreal, is converting an 1132-A British receiver for band-switching on 2, 5, and 6 meters. John is anxious to QSO 6 meter stations in Brockville or Kingston. It seems that there are good possibilities for a very active net in the Ottawa Valley, Eastern Ontario section, if the station could get together and consolidate on equipment, polarization, etc. There should be some 144 Mc activity to report from Montreal soon, as a number of SCR522's have recently been sold in that district.

Canadian VHF DX Records.

50-54	—Ve7VY (Vancouver, B.C.) — W2PWP (Delanco, N.J.) 2500 miles—July 27, 1947
144-148 Mc	—Ve1QZ (Halifax, N.S.)—W1OSQ (Milford, Conn.) 500 miles— Aug. 27, 1947
235-250 Mc	—Ve3BNG (Waterdown, Ont.)— Ve3AEZ (Hamilton, Ont.) 15 miles—May 18, 1947
420-430 Mc	—Ve3AND (Hamilton, Ont.)— Ve3BFF (Hamilton, Ont.) 1 4/5 miles—May 18, 1947

Dates on which six meters has been open to the Ve3 district are as follows:

Dec. 21.—0800 hrs—0900 hrs.—W6's and W7's, (weak)

Dec. 24.—1400 hrs—1500 hrs—W8's (fair)
QSY to page 14

VE/W Contest

Begins March 6 at 8 p.m.

Ends March 8 at Midnight

Object: Each VE will work as many W stations as possible in as many United States ARRL sections (see page 6, QST) as possible. Each W will work as many VE stations as possible in as many Canadian ARRL sections as possible (also on page 6, QST).

Time limit: Operation must not exceed a total of 20 hours (list times ON and OFF).

General call; Phone—"Calling any phone station in VE/W contest."

C. W.—"CQ VE/W, CQ VE/W, CQ VE/W de (your call)."

Scoring: Preambles such as the following must be exchanged:

1. Number on contact
2. Your call
3. Check (report given, RST)
4. Your location
5. Time
6. Date

i.e. Hr Nr 1 VeIKS 589 Sackville NB 1012 pm
Mar 6

Each preamble sent will count 1 point

Each preamble received will count 1 point

It is not necessary for preambles to be exchanged both ways before a contact may count, but one must be sent or received before credit is claimed.

Mark each new section as it is worked

W stations multiply the final score by 8, there being approximately eight times as many USA sections. VE stations multiply the number of points by the number of USA ARRL sections worked.

Frequency Bands: Any or all amateur bands may be used.

Power Multipliers (final score): Under 30 watts—multiply by 2; Between 30 and 100 watts—multiply by 1.5; Over 100 watts—multiply by 1.

Operator handicap: If more than one operator participates at one station the total score must be divided by the number of operators participating.

Awards: A Certificate of Merit will be awarded to the leader in each of the ARRL sections. CAROA will award a Certificate of Merit to the leaders in all VE districts and a challenge trophy to the National VE leader. The Montreal Amateur Radio Club's trophy is currently held by W2IOP but will be placed in competition again at the beginning of this con-

test for presentation to the USA National leader.

Attestation: The following certificate is requested with each log submitted:

"I hereby state that in this contest I have not operated my transmitter outside the frequency bands as specified on my station licence, and also that the log as submitted is current and true.

Signature.....

Logs must be received at CAROA HQ, 46 St. George St., Toronto, Ont., not later than March 31, 1948.

BOOK REVIEW

"F-M Simplified," by Milton S. Kiver; published by D. Van Nostrand Co. (\$7.50).

A thoroughly readable and completely non-mathematical survey of theory and practice in this rapidly developing field. In view of the excellent chapter on receiver alignment followed by specific instructions for commercial "home" sets, it may be said to be slanted toward those whose contact with the field is with broadcast work in general and custom servicing in particular. On the other hand, FM transmission is treated in a manner that is perhaps insufficiently detailed to allow an amateur to use it directly as a handbook. To a reader equipped with an average basic radio knowledge, it provides a compact study book, delineating the theoretical aspects of FM—both transmission and reception—with frequent references to the more familiar AM concepts.

—W. H. ANDERSON.

Mr. A. L. Budlong, W1BUD, senior assistant secretary of A.R.R.L., has been making a field trip speaking on the Atlantic City Conference. At the request of A.R.R.L. HQ, CAROA organized a meeting at which Canadian hams might have the opportunity of hearing a report on the conference from one of the attending delegates. The meeting was held at the Royal York Hotel on Sunday afternoon, Jan. 18. Mr. Budlong outlined the preparatory work for Atlantic City which commenced back in 1944 and included interesting highlights of several formal and informal meetings prior to the big event.

DX NEWS OF THE MONTH

R. D. Carter VE3QD

THIS month we inaugurate a section devoted to general dx news in which we hope to pass on to you the highlights of foreign stations heard and worked throughout Canada, as well as items of interest about the dxers themselves. How successful we are will depend on your co-operation, as your reports will provide the material for this column. Let's forget the idea that such reports represent bragging and rather remember that those interested are scattered throughout a vast country and it is only from sources such as this that we know what the rest of the boys are hearing, working and doing. What we would like you to do is send in your total of post-war countries worked and also the calls of any good stations heard or worked. The band used should be shown but not the frequency unless you know the chap uses a spot frequency. We are also interested in QTH'S not shown in the call book. Any items of interest about your activities, equipment, special aerials, etc., will be welcomed. You might also include items of interest about the local hams who don't like to write.

Another thing we would like your opinion on is whether to continue to run the present monthly listing of countries worked. A number of the dx fans feel that it serves little purpose to keep on working the same countries month after month and that many new countries are lost in trying to boost monthly totals chasing countries that have been worked many times before. We ourselves feel that a continuous listing of post-war countries worked is more interesting. However, it's your column, and whatever the majority wish is what will be shown. The A.R.R.L. official list is to be used for counting, and VE and W both count as countries worked. If you later find you have worked a phony, let us know, so that your score may be revised.

This first month, of necessity, will be sketchy, as we only had a few days notice and have had to use material at hand. We hope in the following months to cover Canada from coast to coast. How about helping out by dropping the writer a line each month with your news?

80 Meters

Apparently this band is really hot, as a swell report from 3AGX, Thorold, lists 27 stations worked in the following countries: F, FA, G, GM, GW, HB, ON, PA, VO, YU, ZL. It makes a lot of us wish that we could get up the necessary wire to work 80.

40 Meters

2WW has been doing a swell job on 40, and the highlight of the month was a seven-hour-40-minute WAC on Dec 30, 1947 with the following stations: VK5RX, CR9AN, PAQF, 2S6GO, VP6ZI, Ve4KK in the order listed. Our congratulations on a really fb record. 3IJ has been knocking off the Europeans, but says the dx hogs are even worse than on 20, and that's saying something.

20 Meters

Conditions here for December and January to date have been poor and openings few and far between and then of short duration. However, a fair amount of nice dx has been worked by the gang. We have an interesting letter from VO6EP (VE1EP) telling of conditions in Labrador. Art says they are not as good as home but that the VO6 call helped him raise 52 countries in December. 4RO slipped to 36 countries and says it was the holiday season. You will note, however, that George still managed to snare a new one or two to head the list of countries worked. 1AQ had his best month yet with 52 countries worked. The best are H22BN, MD5DA, W3LYK/Antarctica. 3NF ably represented the D. of T. by working ZM6AF on telephone around 1130 pm. We see by December CQ that 7ZM has submitted his card for WAZ, the first VE ever to perform this feat. Our congratulations, and how about telling us how to hear and work Zone 23. 6FK works 23 countries and also gets out fine onfone for 11 more. He also says OK1RW is looking for VE QSO's, as he used to live in Canada. He particularly wants Saskatoon. 1NE works 20, among which are 16ZJ and EK1AZ. 3AAZ is transferred to VE4 and leaves Ontario with 102 worked. Tough luck, Walt, and let's hope you get enough cards for DXCC.—3AEL sends in a long list of fine dx and encloses an interesting QSL from AR8AB which we hope to reproduce soon—QTH, University of Saint Joseph, Beyrouth. He also tells of a QSO with LA2UA airborne from Oslo to Rome. The plane was piloted by Capt. Larsen, formerly in charge of Little Norway, the LA air training base in Canada, and 100% through the entire flight. By the way, Harold uses an 1155 for receiving, and says the sensitivity beats anything he has yet tried.

10 Meters

This band is wide open, and with 20 watts 3BBY worked 20 countries, the choice of

which was VS9. Some nice dx has been heard here with CR9AG coming in S8 in the evenings. We heard him say he was looking for VE fone contacts. VK, ZL and KH have all been logged on fone and CW, and the Europeans, South Africans and South Americans hit the pin on the meter at times. Some of the locals have sore tonsils trying to raise J. 3BFK had a 6 hours and 10 minutes WAC. 3BBZ has been busy with the mike and raised 38 countries.

Post-War DX Totals

Ve4RO	148	Ve1AQ	69
Ve3QD	146	Ve6AO	64
Ve7HC	124	Ve6EP	52
Ve3IJ	112	Ve6FK	51
Ve1EA	102	Ve4RP	49
Ve3AAZ	102	Ve3AJS	45
Ve2WW	72	Ve3RW	30
Ve7EH	72	Ve3BLY	26

That winds up the news for December and we again appeal for your co-operation in making this column of interest to all. 73 and good hunting.

Send contributions to Ve3QD, 304 Brookdale Avenue, Toronto 12.

As we go to press Ve7HC submits a list of amazing 3.5 Mc dx. Gord worked ZL1HM, ZL1PO, ZL1DI, ZLAGM, ZL4PO, ZL2FM, and XE1IDX and heard reports from FA8BG and G2PL! The latter is approximately the same as a Ve1 or Ve2 being heard in Asia on 80! Gadzooks! Ve2WW wired us that his January total was 42 countries, and Ve4RO shot an even 60. Revisions to the post war totals will appear next issue.

The annual dx contest will boost the totals next month. VE's were heard working Europe on 80.

AR6—from page 6

to accurate logging of frequencies as is desirable in amateur service. With a little mechanical ingenuity it should be possible to arrange some slightly different drive system which would permit accurate logging. If this is not deemed necessary, and the gear box is to be used as is, the appearance of the panel can be improved by shifting the gear box to a position parallel to the edges of the panel, since the sets usually come with the gear box at an angle dictated by the position of the remote tuning cables in the aircraft. The four screws holding the gear box from the back of the panel are accessible through holes in the fibre gear. If this change is made, it will be necessary to loosen the set screws in the coupling to the tuning condenser and in the brass collar of the fibre gear, and turn by hand to make the gear box limit pin, the condenser rotation limit, and the dial end mark coincide. Then relock the set screws.

The receiver seems quite stable, and has been designed to give a minimum of drift during the warming up period by means of temperature compensating condensers in the oscillator circuits.

This month's cover station is that of Wally Barker, ex-G3NQ. Picture was taken before Wally left England. He now signs Ve7AFM in Vancouver. Inadvertently omitted from January issue was identification of the cover shot. It was of Mrs. E. W. Bligh, Ve1OW, of Halifax, N.S.

With deep regret we record the passing of Bill Collins, Ve6WC, ex-4ANL, who died of injuries received while on duty as fire captain of Medicine Hat.

LEARN CODE this easy way



• This automatic INSTRUC-TOGRAPH machine will teach you quickly to send and receive code (Morse or Continental). It comes complete with code tapes and instruction book, gives clear signals as fast or slow as you wish. Low Rental plans, clockwork models, for 1, 3 or 5 months. New machines for sale, Electric Models included. Write for folder giving full details. Also Day, Night and Home Study Courses in all branches of Radio Communications.

RADIO COLLEGE OF CANADA
54 Bloor St. W. - Toronto

Canadian Rental Hdqtrs. for over 10 years.

WESTERN HAM HEADQUARTERS

CALLING

VE 4-5-6-7-8

HALLICRAFTERS RECEIVERS

S-38	\$ 85.00
S-40	139.55
SX-42	414.50
R-42 Speaker	38.25
R-45 Speaker	42.00

L. J. HAMERS & CO.

222 Edwards Ave. The Pas, Manitoba

C A R O A

NATIONAL REPORT

Ve2

Floyd G. Gribben, Ve2XR, 5120 Westbury Ave., Montreal. Phone EL 5387—Greetings once again fellows! Let's get going with the February report, and if you're not mentioned this time why not make it a point to write or phone me after you read the column? At last Ve2 is making a showing in the "DXers of the Month" department of XTAL. WW is the fellow, and he made a WAC in 7½ hours just to warm up the fist. Nice going, Don. The 1948 slate of officers for the M.A.R.C. are as follows: Hal Elliott, KS (congrats on re-election), president; Rupert Grant, QQ, vice-president; Allen Campbell, RL, secretary; Harold Coran, NB, treasurer, aided by the executive committee composed of F'n Job, TH, Al Lunan, WL; Fred Looker, TY, Dave Gillespie, UJ, Gordie Lunn, GL; Bill Munday, FK, KS struggling with home-made ham band coils for his surplus HRO type RBJ receiver. IS got his first J on ten phone with 35 watts. PK still seven contacts behind JJ's 21 in their ZL QSO derby. Welcome to another new CAROA member—Tommy Lott, exG2CIN of London, who is waiting for a Ve2 call. Will be on with pre-war gear from 3857 Harvard Ave., Montreal. KB is another new member and call in Verdun. Tom uses a 6L6 final with 20 watts and a BC-565 receiver on 80. DR, our OT CW man, now of Pointe Claire, sends in letter about going out his way. Says his new QRA brings in all signals S-9. PA modulates on 50 and 20 phone and fiddles with power supply problems. FX, his neighbor, works CW and contemplates PP 818 for phone rig. KV at Lakeside puts out hefty signal on 40. So does YZ at Valois, who is graduating to PP 807. LO of Drummondville is new call but not new operator, for he carries a QSO at 25 w.p.m. on 40. NL on Quarbes Ave., Montreal, is new call. Ex-GSRN been in Montreal for quite a spell and hopes for Ve2 call. ABT is new call on 40 and runs 25 watts to 807 from 7780 Champagnier St., Montreal. TU and ZY stick to 80 CW. AH has final amp, adding 500 watts to his light bill on 40 CW. DU says after 20 years of ham radio he now exceeds 100 watts and now operates on 75. JJ built converter for GR-10 receiver to eliminate images on 10. WK rebuilt rig after old one went up in smoke! They all wonder how DL does it with only 15 watts on 75. XR attended presentation dinner given by the sponsors of the Field Day Trophy, the Canadian National Carbon Co., in Toronto. Winners were West Side Radio Club. How about the M.A.R.C. winning it this year, fellows? It's a beauty! Suspense was great at December meeting of M.A.R.C. because the NC-178 bought from club funds was given away by drawing for a lucky number printed on the membership cards. Just like the high-power guy winning a 201A, the low-power one a 2047A, the phone man a bug, and of course the CW man a mike, . . . the fellow that won the receiver had no license! The lucky guy was Jock Black of B.O.A.C., who lives with CY. Here's hoping that ticket will be along soon. Jock kindly donated his Hailleraerts receiver which he wants to be given to a worthy cause. If you know of someone in ham radio who cannot afford to buy or make a receiver, let a member of the executive hear from you. Clark Rodimon, W1SZ, in the company of Mr. George McGrath, the export sales manager, both of the National Co., were on hand for the NC-178 drawing, and SZ gave a very interesting talk on the new E.S.C. type of phone transmission called single sideband suppressed carried. GE counting on ten phone operation as he put up full-wave clothesline. QS knocks off the G's with his folded dipole on ten. YS pounds it out on the low end of 80. CO doing fine job on supervision of food parcels for G's sponsored by the M.A.R.C. Over 20 G's have been lucky so far. VL and JJ played host to TG9JW while he was in town to donate a sparkler to a lucky local YL. BN handled QRR traffic from plane rescue in Labrador and got photo and write-up in Montreal Star. Nice going, Pop! Rumored that XX moving to Vé. If so, we're sorry you have to leave us. We wish you the very best down Moncton way, Jimmy. GM and xyl spent year-end holidays in the home town—Quebec. Reef Department—Often heard: "R-R OK OM SORRY BUT MISSED MOST OF THAT". Why on earth do they always come back with that when "R" means "received O.K." and nothing else? If you didn't receive it

O.K. then don't say you did! Let's say what we mean. Don't forget the A.R.R.L. convention this October in Montreal, sponsored by the M.A.R.C. Get the publicity going on the air, and if you've a spare room at home why not invite an out-of-town ham friend to stay with you when attending the convention? Do your bit to ease the accommodation problem at hamfest time. Well, that's all for this time, fellows. How's about giving me a phone call or letter so's I can include you here next month? See you here then. 78—Floyd.

Ve3

R. C. Hunt, Ve3WX, 103 Garfield Ave., London, Ont.—Beaver Net includes at present TU, TM, WX, XO, GL, BMG, ATR, BME, SF, AWE, AWJ, DH, BCS, CY, and still looking for more stations. Join us on 3535 KC at 7pm daily. OI lost antenna and pole in aleet and wind. AWE working day and night on VFO. BME also struggling with VFO. ATR feeds TL-1 and BN with traffic. TM and SF carry load on TL-1. HF has decided to move to London. Welcome, Art. CP and ADC busy forming phone club; see them Sunday am if you can get up before breakfast. Good turnout last Sunday as I hear from eavesdropping. Also some good bargains in the swap club; see AZH for details. GT was visitor at WX shack. QK—Wish someone would pull him up or out of whatever hole he has crawled into and get him on the air. EF seems to go great guns in contests—where does he go between times? HI has added another antenna to his farm, still has a plumber's nightmare to come; guess he works some dix though. AWJ back with us again; rebuilding over? DU growing fat on his own cooking things looking up this month. Received two reports from AWE and ABW. Guess those boys on phone net that I heard crabbing about no Ve3 reports were talking through their hats instead of their mikes. Do you lose the ability to write when you go on phone as well as the ability to copy code? The thoughts here expressed are the ones of the writer and do not necessarily imply sponsorship by XTAL (or do they?) 78—Bob

Ve5

Bill Gordon, Ve5MW, Oxbow, Sask.—5GA is heading the pot this trip. Bill did some mighty fine emergency work during a rock slide in B.C. Here's another feather for Bill's cap. W8RPS called CQ portable from a B29 bomber, 5GA and QT called and raised him. When they hooked, W8RPS was over Wichita, Kansas, flying 250 m.p.h.; they had to give their location each hour. Bill was just telling them that his old home town was Burlington, Iowa, when the navigator stuck his head in the door and said that they were just over Burlington. Bill was receiving W8RPS R8, S7 to S. They were using a Collins DI transmitter running about 86 watts and had a 65-ft. long wire antenna on the ship. When Bill signed off with them at 3:35 am they were over Galilee, Ill., destination being Washington, D.C. 5CM blew a transformer—tough luck, Art. 5FA (WCR) chasing snowmobiles around at North Battleford. 5LM is in Regina with a brand new rig running 300 watts to a pair of 810's. 5GD has also come out of hiding on ten and come up to 75 along with 5RD at Spy Hill. Reg's power plant still has that nasty habit of running out of gas. 5CI is putting up a new beam and getting ready to go on ten. 5RF has a 19 amplifier with an 813, and will soon be on 75 as soon as he gets his "A" ticket. 5AP has to QRT occasionally to wash the dishes. 5LY is active on ten, twenty and seventy-five and had 5GY as a visitor. Among Christmas visitors were 4AU, who was at Oxbow, and 5RB's sister, Ethel, whose voice we hear whenever she is home. She sported a new boy friend by the way. 5MW has new class B modulator with PP 807's and a new Astatic JT40 Crystal mike. 5KJ worked 7RR on 80 CW at noon. Stuart, by the way, has a traffic report of 145 (December)—beat that if you can, fellows. Good going, Stuart. Well, if you don't see your call mentioned

in the above it is not my fault, so please send us some news. EXTRA: 6GA and 5XU have been heard in England on 75, but are too modest to say anything about it. 73—Bill

Ve6

W. R. Savage, Ve6EO, Lethbridge, Alta.—6IX informs us of a blizzard so we can be prepared when it hits the south country, but it did not show up; he must have kept it all to himself. 6LM works for the Canadian Utilities, but we can never seem to get a QSO with you, Bill. How about it sometime, OM and we can talk about 1-14, CD, CFS and all the rest of it. 6LA claims he got more kick out of ham radio in the pre-war days, but I think he got a real thrill lately when he worked a ZL on 75 fone. 6HP is quite active on 75 meter fone. 6PP has worked so much dx now that he won't bother to put the rig down on 10. Well, it is nice to hear you on 75. Pere, 6HO has his ham shack and radio repair shop in the basement. He also generates his own AC power. 6BM puts out a nice signal on 75 fone. 6HR stays up to the wee hours of the morning to work dx on the 75 band. 6SI is boasting of a brand new granddaughter. 6MA is busy trying to keep his antennas up in the air as well as rebuilding his rig. When you visit Bill, be sure to take your smokes, fellows, and try out his new call letter ash tray. 6WW is going to build a new and separate 10 meter RF unit, using his present modulator on it. 6YN has RF on everything around the shack when he just has his oscillator operating. Better put all the RF in the antennas, Pudge. 6OD is looking over Link trainers now, so look out. He will be making a tailspin while he is having a QSO. Keep on the beam, Eric. We also heard via grapevine that he has so much RF on ten meters that his BCL receiver started to burn up. Maybe that is why you can't hook that juicy dx, Eric, hi. 6GY is busy on 75 fone, but we don't hear him on very much. 6GK has been on 10 fone for so long he hardly knew how to put the rig on 75, but he made it. 6DN has a sore throat and is having a heck of a job talking over his rig, but he is doing OK just the same. 6MH has some time trying to talk into his mike with so much QRM from the junior operator. 6KA is still putting out CW on 80. 6FE seems to be doing OK for himself by the number of QSL cards that are coming through for him. 6EM is having trouble with his three element beam. It seems that he is not sure if the RF is beaming the correct direction or if it is back-firing. 6MP winds her transmitter in between the QRM like a captain pilots his ship around the rocks. Them that ECO's are some gadgets. What will they think up next for radials. 6HZ can keep his end up with stories on the air. Fred Allan and Bob Hope have nothing on Glen. 6BZ we see your call still in the book Bert, but we never hear you on the air. Where are you? On 2 1/2 meters? 6KN has really got settled down now in a house, his rig going and putting out a nice signal. Well that is all for this month, gang, so let's hear from you next month. This might be a little late when you read it but I really mean it, and that is, a real healthy, happy and prosperous new year to each and every one of you.

Ve7

Ernie Savage, Ve7FH, 4553 12th Ave. W., Vancouver, B.C.—Well, gang, more and more of your clubs are sending us words of what you are doing, so give your press delegate a push to get the info out to us. Ve7ARA, your voice of B.C.A.R.A., was on stated time and date, but Prince Rupert 7LK, South Okanagan Radio Club 7ZF, University Radio Club 7Q, Vancouver Radio Club 7FB were the only stations that checked in. So, watch for 7ARA, it's your voice of B.C.A.R.A.; also make sure your delegates or representatives are out and with a voice. Cyril 7ACW, is doing well now in Port Alberni and there is a young fellow out there who is showing the gang up—Chas. Key, portable 6AX, and works ten, forty and eighty CW, and are the Port gang's faces red when he tells them his age. Only 73. What's worse, he is more active. 7ACC, Ivan the Terrible, is now 7BB and works too hard to get on. They say 7PY has that six-meter look and query after a QSO with W7BOC, who is a six-meter man. Whispers have it that an old bug has bitten a long time absent amateur and 'tis said 7DD is coming on phone again soon. Vancouver Amateur Radio Club reports that new calls are not so far away for some six members. 7AL, who has been busy and missed the SS contest in receiving more QSL's than if he had been on, and also good dx. 7AFN has a dream rig for ten, much worse (I said it) corn than the last one. 7PO

Hey fellas! . . .

**Better start planning now
for the**

A. R. R. L. CONVENTION AT THE Mount Royal Hotel Montreal, Que. OCT. 8 and 9



**The OM pays \$5.50
The YLs and XYLs \$3.50**



It's not too early to get your reservations and further information so be sure and write to the

**Montreal Amateur Radio Club
Box #1, Postal Station "D"
Montreal, Que.**

has a nice new HQ129 and now hears signals one at a time and not the airways. 7SL has again changed plans of this super-transmitter. So closes 1947—Dad, please finish it by end of '48. 7CN runs from 500 watt to one watt CW so he can cover any emergency or power condition. 7HE, the "Happy Engineer" of Sproat Lake, will be back on soon. 7VC, 7ZZ and 7HC all CW lads running from a quarter to a full gallon, report twenty meters dead but forty red hot. 7SN and 7DO spend all their time putting up their antennas after every blow. From S.O.A.R.C. comes word of great doings for coming season. 7AMJ is rebuilding, including a modulator, and will be on 75 and 10. 7HL is a recent arrival in Penticton. 7BF claims that electric razors bother him and claims DDT should be used. 7YE, who hunts on 20 between seasons, has been seen packing a load of artillery for four-leg game. 7FD was inspected by his father 7BN and put the rig on to prove it works. 7AFC has some rods for beams; just a plug. 7RT has fled power and lousy antennas but dx rolls in. 7CB has been appointed official temperature reporter for five o'clock net. Through donation of SWL's and net gang, Victoria will have a new thermometer. 7BQ has a nice beam for those very UHF and does work. 7TQ has his "Beam Pole" up again and squinting out signals. 7ACF is active on 10. All the best of Health, Wealth, dx and good wishes for 1948.

73—Ernie 7FB.

B.E.R.U. Contest

General Rules

1. The Event will be divided into three sections, namely:—(a) Senior (High Power) Transmitting Section; (b) Junior (Low Power) Transmitting Section; (c) Receiving Section. The three sections will be run concurrently.

2. The Contest is open to all British subjects living within the British Empire and British Mandated Territories and to British Occupational Forces operating properly authorised stations, who are fully paid-up members of either the R.S.G.B. or one of the British Empire Societies listed overleaf. All entrants agree to be bound by the Rules of the Contest.

3. Entrants who are not members of the R.S.G.B. must certify in the declaration overleaf that they were fully paid-up members of their local society at the time of the contest.

4. An entrant not located in one of the prescribed Prefix Zones shall be considered as being in the Prefix Zone nearest to his station.

5. Contacts with, or reports from, ships or unlicensed stations located in countries where licenses are obtainable will not be permitted to count for points. The decision as to whether a station is to be classed as unlicensed will rest with the R.S.G.B. Contests Committee.

6. Only one person will be permitted to operate a specific station for the duration of the contest.

7. A trophy will be awarded to the fully paid-up member of the R.S.G.B. scoring the highest number of points in each section of the contest. Certificates of merit will be awarded to the first three stations in each section and also to the leading station in each Prefix Zone, providing at least three entries have been received from the zone in question. In addition a second certificate will be awarded to each zone provided ten or more entries are received from that zone.

8. The declaration at the foot of the Entry Form must be signed by the operator, who will be recorded as the competitor.

9. Entrants must provide their own log sheets which, together with the analysis sheet, must be legibly written or typed as set out overleaf. Incomplete entries will be disqualified.

10. All entries must be posted within seven days of the close of the contest. No entry will be accepted at R.S.G.B. Headquarters, New Ruskin House, Little Russell Street, London W.C.1, later than June 14, 1948.

11. The judging of entries will be carried out by the R.S.G.B. Contests Committee. The President's decision will be final in all cases of dispute.

12. No correspondence can be entered into regarding any decision made by the President or Council.

13. The contest will extend from 00.01 G.M.T., Saturday, April 3, 1948, to 23.59 G.M.T., Sunday, April 4, 1948, and from 00.01 G.M.T., Saturday, April 17, 1948, to 23.59 G.M.T., Sunday, April 18, 1948.

14. Contest operation during local hours of restrictions in the use of electricity for wireless which have been publicly announced is forbidden. The duration of any such restrictions will be recorded on the entry form.

Rules for the Transmitting Sections

1. Fifteen points will be scored for the first contact on a specific band with a British Empire station located in any Prefix Zone outside the competitor's own zone. Fourteen points will be scored for the second contact on the same band with the same zone, thirteen points for the third contact, and so on, to the fifteenth contact, which contact will score one point. All contacts with that particular zone on that band thereafter will count one point each. This scoring procedure will be repeated on each band to encourage multi-band operation.

2. Only one contact with a specific station may be made on each band during the contest.

3. The contest is open for two-way C.W. contacts only on any amateur frequency band, providing the input to the valve or valves delivering power to the aerial is not in excess of that specified on the competitor's license and in no case more than 150 watts in the Senior (High Power) Section and 26 watts in the Junior (Low Power) Section, and providing the entrant has permission to operate his station on the band or bands in question.

4. The conditions laid down in the entrant's transmitting license shall be observed.

5. A serial number consisting of six figures must be exchanged before points may be claimed. The serial num-

ber is made up of RST and three numerals denoting the number of the contact, the first being 001, and so on.

6. Entrants receiving consistent tone reports of less than T8 will be disqualified.

7. Specially appointed Band Monitoring Stations, under the auspices of the R.S.G.B., will be active during the contest. Any station reported off frequency by these checking stations will be disqualified without appeal.

Rules for the Receiving Section

1. One point will be scored for each British Empire C.W. station heard working another British Empire C.W. station, providing the station heard is located outside the competitor's Prefix Zone. An additional 80 points will be scored for each Prefix Zone heard on each band (i.e. 81 points will be scored for the first station heard in a particular zone and one point for each subsequent station heard in the same Prefix Zone on the same band). This scoring procedure will be repeated on each band to encourage multi-band reception.

2. Before a point can be claimed, the following information must be logged:—(a) Call of station heard; (b) Call of station being worked; (c) Entrant's report on the signals of the station heard (RST); (d) The Serial Number given by the station heard to the station being worked.

3. CQ and Test calls will not count for points.

4. The same station may only be logged once on each band during the two week-ends of the contest.

Copies of the Rules for distribution among members of CAROA will be available upon request from Headquarters at 46 St. George St., Toronto, Ont. The analysis sheet mentioned above is on the reverse side of the rules.

VHF—from page 8

An exceptionally good E layer skip occurred on Dec. 27 when the six meter band opened to W4 and W5 district from 1150 hrs to 2030 hrs. EST. Numerous Ontario stations were able to take part in this choice bit of dx'ing, and some of them thought the band was going to stay open forever! A short opening, with good signal strengths occurred from 2100 hrs to 2030 hrs on Dec. 28. The six-meter band opened briefly for W7's on Jan. 1 and on Jan. 4 from 0930-1230 hrs. W0, W4, W8, and W9's were rolling through.

VHF WRINKLE

Now that Spring is approaching, and new antennae for VHF are being thought about, it would be wise to remember that brass and aluminum are not good companions. Galvanic corrosion of the aluminum, over long periods, is considerable, especially in the presence of a conducting liquid such as water or condensed smoke fumes. Steel and aluminum are closer together in the galvanic series. If bolts or screws are to be used in the making of a beam, it would be wise to use steel, coated with paint or glyptal to prevent rusting. As an alternative to painting, steel screws can be "tinned" with soft solder. Tinning of brass screws, while helpful, will not completely insure against galvanic corrosion.

Public Service

Reported by E. Savage, VE7FB

It all started on Dec. 11, and the first emergency traffic came from Lake Shalalth, where the B.C.E.R. Co. has a powerhouse for the Bralorne mining town and area. At the lake we have the B.C. Police and Bob Leighton, VE7EI (VE7AJQ), who first informed VE7US, of Vancouver, on Dec. 11 that he wished him to phone Bralorne and find out the trouble with the lines. Wind, snow and rain had taken out both power and phone lines up there.

Dec. 12 I was asked by Bob to arrange a sked for head office and their manager up there. On Dec. 13 the situation was more in hand, and a sked was arranged for 1630 hours. Remarks made sure did our hobby good.

That ends the Bralorne Lake Shalalth traffic except for the thank you letters and copies enclosed.

Now we start on the other. It turned out wonderfully if you know this country. It's rugged and wild. When Mother Nature goes on the rampage all hell can be let loose. There are miles of deserted country and this story tells why they are lucky, as there is many a drop that you don't walk out of, and that they did.

Place, VE7FB. Time, 10:30 p.m., Dec. 18. Condition of the rig—Crystal stage half apart, as was putting in crystal switching. The land line rang, and it was the C.P.R. telling me they must get in touch with Port Alberni and asking could we do anything about it. I said yes, and threw together the crystal stage and was calling CQ Emergency at 10:55, hoping that VE7ACW and 7CX were on and listening to 3850 Kc; also gave several shouts to our SWL's who are listening most of the time, to phone someone there. The land line buzzed again and C.P.R. have lost their train from Port Alberni to Nanaimo, and gave me the first message that told that CQ Emergency was out. Back on with CQ QRR, and that brought up W6TGE, who asked me if he could help, and I asked if we could have 3850 cleared. He soon was doing just that, and soon it was so nice that a CQ dx was very tempting, and did hear the east coast on 3850 at one time.

At 11:30 we heard two locals saying that they would phone me Port Alberni was on and have been trying to contact me. QSY to 3825 (the new switch worked) and thanked VE7TC and VE7SL and did hear VE5HH telling VE7CX that I was calling them. We contacted VE7ACW and VE7CX at 11:45 and first message deliv-

ered into Port Alberni. At midnight VE7BY arrived here. He just got off shift at the DOT monitor and pitched in.

Whilst I went top side and made tea and toast, traffic was coming in that the train was swept off the track by landslide and is in the ditch and crew escaped with minor hurts, but have taken out all the lines. Cy and Stan were alone in their stations, one in Port Alberni and the other in Alberni, but all went on fine and traffic went smoothly, except the commercial foreign stations on the frequency caused some trouble toward early morning when the signals went down and theirs came up. It was about 4 a.m. when the C.P.R. decided that there was nothing they or we could do, and at 5 a.m. they said we could clear. 7BY made skeds with 7ACW at 8:30 a.m. and they were told a single line was laid and they can carry on.

From the press—The C.P.R. sent a message around the world to contact Port Alberni. That was that, and no more. They did cable around the world, but to end up with a dead line at Banfield, V.I., and that was when the amateurs were called in.

Enclosed is the letter from the C.P.R. and B.C.E.R. as copied and is true.

Vancouver, B.C.,
Dec. 31, 1947.

Dear Mr. Savage

Our reports on the recent power troubles occasioned by wind and snow in the Bridge River Valley contained references to yourself. I am informed that you were instrumental in establishing communication between our powerhouse at Shalalth and the Vancouver office, and also between our Shalalth and Bralorne Offices, during the protracted outage of commercial services following the storm of Dec. 12-13, 1947.

This was a very real contribution in getting needed assistance to our line gangs, and for the restoration and subsequent maintenance of service to our customers at the mines and in the valley.

It has given us all a great deal of pleasure to find that we have neighbors like yourself who will come forward with help when we need help.

I should like to assure you of my personal appreciation as well as that of my company, of your very useful work and of the thoughtfulness which prompted it.

T. INGLEWOOD,
Vice-president and Chief Engineer.

Vancouver, B.C., December, 1947

Dear Mr. Savage,

On behalf of the Canadian Pacific Railway Company I wish to express to you our sincerest thanks for the assistance rendered by yourself during the recent interruption to our facilities just west of Cameron Lake.

I can assure you that the transmission of messages covering the train mishap was of great help to us, in that it enabled us to move the necessary men and equipment to the scene with the least possible delay.

L. E. HANSON,
Supt. Communications.

Dear OM . . .

10524—116th Street,
Edmonton, Alberta,

Oak Ridges, Ontario,

Editor, XTAL:—

I have a suggestion to offer to those Canadian hams who use the so-called 75-meter band... and they seem to be many! In Western Canada, especially in the northern part, there are no American stations within 350 miles, so why don't the Canadian hams use the 3850 to 4000 Kc part of the band more? I have operated there, but it is almost impossible to get a contact with a Canadian station because the VE's just don't listen there. I was listening in that region last night, and I find that the average signal from the W's is about two or three S units weaker than that of the VE's between 3800 and 3850 Kc. We have this latter part exclusively, which is very nice, but just imagine four or five local stations all trying to operate in 50 Kc! The D.O.T. doesn't put four local B.C. stations all into 50 Kc, and many of these amateur stations are as powerful as some of the B.C. stations.

It seems to me that a suggestion was made in XTAL some time ago, when the poll was being taken regarding the use of the amateur bands in Canada. This was that only low power stations be permitted to use the exclusive part of the band. This power limit might be, say, 50 watts input. This seems reasonable to me, as we obtained use of this part chiefly because we couldn't compete with the higher power used by the American stations. However, the amount of war surplus equipment available has greatly increased the number of high-powered Canadian stations until many now operate at the maximum legal input. These high power stations should operate in the 3850 to 4000 Kc region, as there is no difference that I ever heard of in the potency of a Canadian and an American watt.

You may think from all this that I am a low-power addict. This is not the case, as I usually run an input of 175 watts to an 813. However, I also have a small transmitter with an input of 25 watts to an 815 which I use as much as possible to reduce B.C. interference. I think more of the fellows should do this. We know that many of the small B.C. sets are poor and have little selectivity but we cannot do much about them. A general reduction in power, at least during the evening hours, should help in preserving more harmonious relations with the B.C.L. Remember, they are more numerous than we are!

Roy Usher, VE6EA.

Editor XTAL:

It seems that Earl Chiswell, VE3AYE, was operating VE3JJ, the West Side Club station, during the Sweepstakes. At the end of about 17 hours during which he piled up the impressive score of approximately 50,000 points, he decided to change to another band. Although he pulled the switch which dropped out the relay in the high voltage transformer primary, something happened to the relay, which fell off its appointed place on the chassis or panel. The contacts closed, and Earl received a 1,000-volt kick which shook him so badly that he was forced to give up the contest.

It was lucky that Earl was running low power, otherwise he would have received an almost certainly fatal 2,400 volts. As it was, Earl's hands and arms were burned. I am told that the circumstances were such that he is a very lucky man to be alive, as it is.

I am constantly in fear of the same thing happening to me and have taken steps to make it as nearly impossible as I can. I have run a two-conductor lead (ordinary parallel rubber fixture cord) from the high voltage transformer to the transmitter chassis and have mounted two 110-volt red Christmas tree bulbs on the chassis right in front of the final tank coil. The bulbs are in parallel with the transformer primary which is controlled by a standard electric light toggle switch. If the transformer is on, the bulbs are lit. If one bulb burns out, there is still one to warn me, and I replace the burned-out one at once. The chance of both burning out at the same time is remote.

Candelabra base sockets for the 110-volt Christmas tree bulbs are readily available at 11c each and the bulbs are 10c where I buy them. I believe that one must have two, to be safe. After all, all obstruction lights at airports are double, in case one bulb burns out. If anyone can suggest cheaper life insurance, I would like to hear of it.

During a contest, when one is working at top pitch and is apt to be pretty tired, it is very, very easy to be so absorbed in operation, and so tired, that one forgets a little thing like pushing a switch when changing coils. With a couple of bright red lights looking you in the face, it is pretty hard to forget.

Sincerely,

Donald R. Gunn, VE3EF



YOU CAN BANK ON BUD FOR LEADERSHIP



NEW BUD GIMIX GX - 79

A multi-purpose unit with five uses: (1) a wave meter; (2) a monitor; (3) a field strength meter; (4) a carrier shift indicator; (5) a highly sensitive neutralizing instrument. Dealer Cost \$10.95

NEW BUD FREQUENCY CALIBRATOR FCC - 90

Makes it easy for you to know your exact frequency always! Entirely self-powered. No need for a connection of any sort to receive. Complete with 100 Kc crystal and tube. Dealer Cost \$19.45

NEW BUD VFO - 21

Compact and entirely self-contained. Stability comparable to crystal. Plug-in coils used for highest efficiency. Has VFO operation with provision for switching to crystal operation. Dealer Cost \$71.25 (with a set of 40 meter coils).

When you buy BUD, you not only get the best at the lowest possible prices but you are provided with the latest in radio and electronic equipment. For "top-flight" performance buy BUD for all your needs. BUD products are all made to the same high standard . . . and they work better together. You can detect the difference. Send coupon for new catalog!

SOLD THROUGH ALL LEADING RADIO DISTRIBUTORS

Canadian Representative

HEFCO AGENCIES, 1382 Queen St. East, Toronto, Canada



The mark of perfection

BUD RADIO INC.
CLEVELAND, OHIO

■ This coupon is the key to the new lower prices in BUD Products.

■ BUD RADIO, INC.,
2122 East 55th St., Cleveland 3, Ohio.

■ Send copy of NEW BUD CATALOG.

■ Name

Address

■ City

State

Get TOP Performance per Watt with these Low-Loss **B&W JUNIOR INDUCTORS**

B&W JUNIORS are highly efficient in operation because they are made by the same exclusive process for which B&W coils are famous. They're molded into position with a minimum of insulation, thereby reducing coil losses to minimum and insuring maximum performance. Mechanically, they're as rugged as they come—don't let the small amount of insulation fool you! And since they're both efficient and compact, they often fill the bill where space limitations are important considerations.

B&W JUNIORS may be used in oscillator, buffer or final amplifier stages with input powers up to 75 watts and plate voltages up to 850. Three different assemblies are available—end link, center link, and variable center link. For complete details, write Dept. XL-28 for B&W Bulletin.



BARKER & WILLIAMSON, INC. 237 Fairfield Ave., Upper Darby, Pa.

Canadian Representative, Wm. F. Kelly Co., 1207 Bay St., Toronto 5

ONTARIO PHONE NET FOOD FOR G's FUND

To all our kind supporters, who are many and widespread, happy new year to them all and our project in 1948. A little side story: The students of the Dundalk, Ont., high school collected food for Princess Elizabeth's wedding gift but were too late for shipment. They then saw the publicity cards printed by AHP for our cause and immediately turned over 740 pounds of tinned food to us for distribution to British hams. What a windfall! Those youngsters deserve the very best in praise and encouragement. Grand work, kids!

We have received letters from G2BOZ, G4OI, G5LJ and G5LK that they received their parcels Dec. 23 and 24, respectively, and their appreciation is overwhelming.

Forty-two parcels are on their way and more going weekly.

Now all that is left is for us to keep it going and the phone net has that determination. The local hams who have been packing and parcelling are more than willing to give all their spare time; all they need is funds. It

has been a beehive of activity so far. Don't let it slow down, boys.

Acknowledgements: 3AYW, \$1.00; 3AHS, \$1.00; 3AFU, \$1.00; 3AIU, \$1.00; 3AWI, \$1.00; 3ADC, \$1.00; 3AZH, \$1.00; 3ADE (Progressive Radio Club, Waterloo, Ont.), \$25.00; 3ACE, \$5.00; 3AQB, \$1.00; 3APS, \$2.00; 3AND, \$1.00; 3ABP, \$1.00; 3OAK, \$1.00; 3BMH, \$1.00; 3BFF, \$1.00; 3BGT, \$1.00; 3BER (c/o 3SY, Clinton Amateur Radio Club), \$10; 3CT, \$1.00; 3CI, \$1.00; 3DU, \$5.00; 3DC, \$1.00; 3DE, \$2.00; 3GC, \$1.00; 3HG, \$1.00; 3JU, \$1.00; 3KM, \$1.00; 3LU, \$1.00; 8NW, \$5.00; 3NI, \$1.00; 3QB, \$2.00; 3QC, \$1.00; 3VV, \$1.00; 3YJ, \$1.00; 3YR, \$1.00; Cliff Marsh, Niagara Falls, \$2.00; G. D. Flemming, Owen Sound, \$10.00; Bill Down, Toronto, \$1.00; "Friend," Detroit, Mich., \$3.00; Bert Fogal, St. Thomas, \$2.00; Jean Gullion, Niagara Falls, \$1.00; Wilson Creighton, Lanark, Ont., \$1.00; Mrs. Reta Leason, Lanark, Ont., \$1.00; Mrs. R. C. Waters, Oak Harbor, Ohio, \$1.00; J. Watson, Toronto 9, \$1.00; Harry Watkins, London, Ont., \$1.00; W2LWW, \$2.00.

GET THE C.E.S. HABIT . . .

FOR HAM GEAR NOW

MILLENN

No.	Price
10035—Dial	\$ 8.50
10039—Dial	3.75
90810—Hf. Exciter	95.00

MEASUREMENT ENGINEERING

XC-100—Crystal Calibrator, attach to your present receiver to give marker sigs. every 100 kc.	16.00
---	-------

QSL CARDS

Per 100	1.50
Samples on request.	

HAMMOND

Exciter Panel and Chassis	
1426—For 6V6 or 6L6-807	4.35

TRIPPLETT

666HH—Multimeter	25.00
625NA—Multimeter	55.00

SIMPSON

77—Modulation Meter Monitor, Wavemeter	29.50
260—Multimeter	54.95
240—Hammeter Multimeter	29.95

BARKER AND WILLIAMSON

CC50—Coaxial Cable Connector	7.00
M. Series, Midget 5 Pin Plug-in Coils, end or center link	1.45
J. Series, 75 Watt 5 Pin Plug-in Coils, end or center link and center link variable	1.95
TVH—500 Watt Series	
TVH—Base with swinging link	7.20
TVH—Coils, any band—10, 20, 40 or 80	5.50

Turrets

JTEL—End linked, 75 watt	13.15
JTCL—Center linked, 75 watt	13.15
BEL—End linked, 150 watt	16.35
BCL—Center linked, 150 watt	16.35

• Other types of B and W available also.

WAR SURPLUS

OIL FILLED CAPACITORS

Well known manufacturer.

1 Mfd.—600 volt	\$.44
10 Mfd.—600 volt	1.75
4 Mfd.—1000 volt	1.58
8 Mfd.—1000 volt	2.63
4 Mfd.—1500 volt	2.19
2 Mfd.—2000 volt	2.63
2 Mfd.—4000 volt	4.38

COMING SOON

HAMMOND BEAM

Model 1321—3 element for 10 or 11 meter operation	34.50
---	-------

BRIDGEVIEW

SHEET METAL PUNCHES

No.	Size	Screw Type	Price
498	1 3/16		3.25
499	1 1/2		3.95
500	1 3/16		3.95
501	1 1/2		3.95
502	1 1/2		4.50
503	1 1/16		3.95
504	1		3.75
505	1 1/2		4.75
506	1 5/16		4.20
507	1 1/4		3.25
508	1 5/32		3.95
509	1 1/8		3.25

WAR SURPLUS

C2—Freq. Meter	29.95
RH 32—High Freq. Unit, can be converted to 144 Mcs.	35.00

CANADIAN

ELECTRICAL

SUPPLY CO. LTD.

TORONTO—387 Yonge St.

285 Craig St. W.—MONTREAL

AT LAST!

It's New . . .

It's Canadian . . .

It's NORPAK!

A Canadian Ham Transmitter
designed and built by amateurs
for amateurs.



NORPAK
100-T

Norpak is no longer an experiment. It has proved itself under actual test in operation for over a year. It is now ready for the Canadian Amateur. A sensational new medium power transmitter designed for Compactness - Dependability - and Simplicity of operation. Frequency coverage is 10 to 160 meters.



NORPAK
100-M

Designed for use with the Norpak 100T. Simple to install - just plug in. All the latest features have been incorporated in these units.

For further information consult your local jobber. If he does not carry the NORPAK line, write direct.

NORTHERN PACIFIC

MFG. CO.

58 West Cordova Vancouver, B.C.

Ve7YD

HAM-ADS

Ham Ads cost only 25 cents per line. They reach more Hams than in any other medium.

WILL TRADE—Bendix 100 watt TA-12-G Trans., brand new, never used; also MK. 111 Tank set with 60 Cy. power supply and dyn. power supply and spares. Trade for a good receiver or what have you. Clifford Roland, R.R. 1, Beamsville, Ontario.

AM REBUILDING—Must sell cheap, TRF Rec., 6F6-807 rig., 700 V., 150 Ma., choke-input. Supply tubes, meters, crystals, etc. Write for details. Peter Kushnir, 293 Mountain Ave., Winnipeg.

SELLING COMPLETE HAM STATION—DeLuxe 150 watt fone/cw All-Band transmitter, 3 section rack and panel, relay controlled, 6 tube VFO, D104 Mike, Bug Modulation Indicator, BC312N Rcvr. Complete with supply, Spkr. and 100 Kc. Standard, 25/60 cycle. All parts new. **SACRIFICE** at \$450. —Ve3AVN, J. W. Gordon, 65 Claybrooke St., Toronto, JU. 7407.

AMATEUR EQUIPMENT designed and built to order. Transmitters, VFO's, Frequency Meters, Modulators, etc. High quality components and workmanship. Inquiries invited. Ve3BDP, 113 Olive Ave., Willowdale, Ont. Phone Willowdale 2892.

HRO FOR SALE, excellent condition, coils, speaker, power supply, 25-cycle, \$200. VE3LK, 8 Coxwell Blvd., Toronto. OX. 3707.

6L6-807 XTAL XMTR. for sale, with coils for 40 and 20, 60 watts CW, ready to go on air, \$80 or near offer. J. Grimbleby, 163 Hammer-smith Ave., Toronto. HO. 8372.

FOR SALE—HQ129X, used about nine months, perfect condition, \$200. E. A. Smith, Ve1IQ, Stewiacke, N.S.

C.G.E. FILMS

One of the largest industrial film libraries in Canada is described in a 20-page booklet recently issued by Canadian General Electric Company. It describes over fifty 16 mm. films, covering a wide variety of non-commercial subjects and available on a free-loan basis.

The booklet will be exceptionally valuable to educational administrators, for many of the films were made expressly for science students of universities and secondary schools. Several films are concerned with the benefits of rural electrification. Others will be of interest to such widely divergent groups as sales executives, industrial, lighting, radio and civil engineers.

Inquiries about the booklet should be forwarded to any C.G.E. sales office and should refer to it by Motion Pictures Catalogue 4172D.

Stability...

THE PRICELESS GIFT OF CRYSTAL CONTROL



There is deep and comforting satisfaction in knowing where you are . . . not within 10 or 15 kcs. . . . but EXACTLY WHERE YOU ARE. Only CRYSTAL CONTROL can give you this satisfaction. With a PR Precision CRYSTAL in your rig, you not only know where you are operating but you know you will STAY THERE! When you buy crystals, buy QUALITY . . . because quality means you get the rugged stability, accuracy and high output you have a right to expect. At today's economical cost, PRs are a real buy. They're commercial quality at amateur prices! Ask

your Jobber for the exact frequency you want . . . and he will supply you with a PR promptly. — Petersen Radio Company, Inc., 2800 W. Broadway, Council Bluffs, Iowa. (Telephone 2760)



SINCE 1934

PR Precision
CRYSTALS

10 METERS
PR Type Z-5.

Harmonic oscillator. Ideal for "straight through" mobile operation. High activity. Heavy drive without damage in our special circuit

20 METERS
PR Type Z-3.

Harmonic oscillator. Low drift. High activity. Can be keyed in most circuits. High power output. Just as stable as fundamental oscillators

40 & 80 METERS
PR Type Z-2.

Rugged, low drift fundamental oscillators. High activity and power output with maximum crystal currents. Accurate calibration

XIAL, FEBRARY
1948,

OUTSIDE BACK
COVER - BLANK
NO ADVERTISEMENT
- UNUSUAL